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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,203	03/14/2001	Yongjun Jeff Hu	M4065.0391/P391	1736

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EXAMINER

WRIGHT, WILLIAM G

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/805,203

Applicant(s)

HU ET AL.

Examiner

William G. Wright SR.

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-- Th MAILING DATE of this c mmunication appears on the cov r sh et with th correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-81 is/are pending in the application.
- 4a) Of the above claim(s) 37-45 and 48-81 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 46 and 47 is/are allowed.
- 6) ☒ Claim(s) 1,3-7,15,17,19-22 and 28 is/are rejected.
- 7) ☒ Claim(s) 2,8-14,16,18,23-27 and 29-36 is/are objected to.
- 8) ☒ Claim(s) 1-81 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

I. Claims 1-36 and 46-47, drawn to a method of making a catalyst body, classified in Class 502, subclass 232.

II. Claims 37-45, drawn to a method of converting hemispherical grain polysilicon to silica, classified in Class 423, subclass 324.

III. Claims 48-61 and 73-81, drawn to catalyst bodies, classified in Class 502, subclass 232.

IV. Claims 62-72, drawn to a sensor device, classified in Class 422, subclass 94.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and Group II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not disclosed as capable of use together as the method of forming catalyst bodies is not related to the method of forming silica.

Inventions Group I and Group III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed can be used to make a crown capacitor.

Inventions Group I and Group IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not disclosed as capable of use together as the method of forming catalyst bodies is not related to a sensor device with a catalyst coated on a substrate.

Inventions Group II and Group III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP § 806.04, MPEP § 808.01). In the

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instant case the different inventions are not disclosed as capable of use together as a method of forming silica is not related to a catalyst body.

Inventions Group II and Group IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together, or they have different modes of operation, or they have different functions, or they have different effects. (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not disclosed as capable of use together. The method of converting hemispherical grain polysilicon to silica is unrelated to a sensor device.

Inventions Group IV and Group III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the subcombination has utility by itself or in other combinations. The subcombination has separate utility such as catalytic utility on its own separate from its utility as a part of the sensor.

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Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Ryan H. Flax on January 8, 2003 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-36 and 46-47. Affirmation of this election must be made by applicant in replying to this Office action. Claims 37-45 and 61-81 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless --

(e) The invention was described in (1) an application for patent, published under Section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

WFW 11/1/03
Claims 1, 3 and 28 are rejected under 35 U.S.C. § 102(e) as being anticipated by Chi '770.

The hemispherical grain silicon is taught to be oxidized at column 3 line 39 et seq. The specific teaching of thermal oxidation is found at column 3 line 7. The teaching at column 4 line 27 et seq. is to a nitride layer over an oxide layer.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. § 103(c) and potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103(a).

Claims 1, 3-7, 15, 17, 19-22 and 28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chi '770 in view of Hayashide '920.

Chi teaches the forming of a layer of hemispherical grain polysilicon and oxidizing at least a portion of the hemispherical grain polysilicon layer. Oxidizing is taught at column 3 lines 4 et seq. The claimed feature of the thermal oxidation is found at column 3 line 8 of the reference.

Chi lacks the teaching of the use of CVD and LPCVD deposition as required by instant claims 15 and 17.

Hayashide teaches chemical vapor deposition in the forming of a silicon layer and oxidizing of the semispherical

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protrusions. This teaching is found at column 3 line 46 et seq. General oxidizing to form silicon oxide is taught in the Abstract. The teaching of a ten minute oxidation time is found at column 7 line 52.

Chi teaches that hemispherical grain polysilicon is most easily formed on an amorphous silicon surface, note column 2 line 61 et seq. This hemispherical grain polysilicon is then oxidized. Hayashide teaches the production and oxidation of semispherical silicon at column 3 line 47 et seq. The two references are directed to the production of the same type silicon body. They both deal with the making of capacitors and accomplish this end result in very much the same way. The Chi reference leaves open how the specific forming and oxidizing is done, thus leaving the particulars of these actions to known art procedures. The leaving of these procedures open to art methods provides motivation to apply any known art procedure such as the procedures taught in Hayashide. It would be obvious for a person skilled in the art to apply the specific procedures of Hayashide and Chi to satisfy the need for a specific procedure not specifically taught in Chi.

Claims 46 and 47 are allowed over the applied art. Claims 2, 8-14, 16, 18, ~~28~~²³⁻²⁷ and 29-36 are objected to as depending from a rejected claim.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to William G. Wright, Sr. whose telephone number is (703) 305-7792. The examiner can normally be reached on Monday through Thursday from 6:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on (703) 308-3837. The fax phone number for the organization where this application or proceeding is assigned are (703) 872-9310 for the regular communications and (703) 872-9311 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1495.



W. G. Wright, Sr.:cdc

June 11, 2003



**STEVEN BOS
PRIMARY EXAMINER
GROUP 1100**